IN THE CLAIMS

Please cancel Claims 15-21 without prejudice or disclaimer.

Claims 1, 10, 13, 15, 17, and 20 have been amended as follows:

1. An integrated circuit for providing drive signals to a piezo element of a milli-actuator device in a mass data storage device, comprising:

a first circuit for receiving head position control signals and for providing a charging current to a sense capacitor in response thereto;

wherein said first circuit is powered by a voltage supply that is measured with respect to a substrate potential; and

a second circuit for mirroring a current in said first circuit at a predetermined mirror ratio to provide drive currents to said piezo element.

10. The milli-actuator driver of claim 8 wherein said voltage supply is not a voltage supply for said piezo element.

13. The milli-actuator driver of claim 8 further comprising:

a first switch connected to disable said first integrated circuit; means

a second switch connected to form a feedback path from said second integrated circuit means to an input of said second integrated circuit; means

wherein when said first and second switches are operated, said integrated circuit operates in a voltage mode.

15. An integrated circuit for providing drive signals to a piezo element of a milli-actuator device in a mass data storage device to position a data head thereof, said integrated circuit comprising:

a current mirror;

said current mirror comprising:

a first current mirror portion;

said first current mirror portion being configured to receive head position control signals from a head position sensing circuit;

said first current mirror portion being configured to provide a first current in response to said head position control signals for connection to a capacitor;

said first current mirror portion being powered by a voltage supply that is referenced to a substrate potential;

a second current mirror portion;

said second current mirror portion being configured to mirror said first current at a predetermined mirror ratio; and

said second current mirror being configured to provide drive currents for connection to said piezo element.

17. The integrated circuit of claim 15 wherein said voltage supply is not a voltage supply for said piezo element.

20. The integrated circuit of claim 15 further comprising:

a first switch connected to disable said first current mirror portion

a second switch connected to provide a feedback path from said second current mirror portion to an input of said second current mirror portion

wherein when said first and second switches are operated, said integrated circuit operate in a voltage mode.